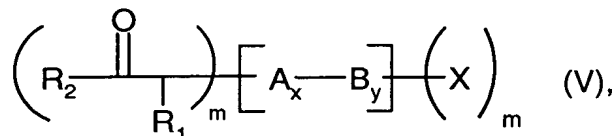


Claims:

1. A polymer or block copolymer of formula:



wherein

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, cyano, phenyl or C<sub>1</sub>-C<sub>4</sub>alkylphenyl;

R<sub>2</sub> is the radical of an acylated, branched, trihydric alcohol, the radical of a fully or partially acylated, linear or branched, tetrahydric alcohol, the radical of a fully or partially acylated, linear, penta- or hexa-hydric alcohol, the radical of a fully or partially acylated, linear or cyclic C<sub>4</sub>-C<sub>6</sub>aldose or C<sub>4</sub>-C<sub>6</sub>ketose or the radical of a fully or partially acylated disaccharide;

A and B are polymer blocks of ethylenically unsaturated monomer units;

x and y denote the number of monomer units in the blocks A and B, one value of x and y being zero and the other value being an integer greater than zero, or both values x and y being integers greater than zero;

X is chlorine, bromine or iodine; and

m denotes an integer from three to six.

2. A block copolymer (V) according to claim 1, wherein

R<sub>1</sub> is C<sub>1</sub>-C<sub>3</sub>alkyl or phenyl;

X is chlorine or bromine and

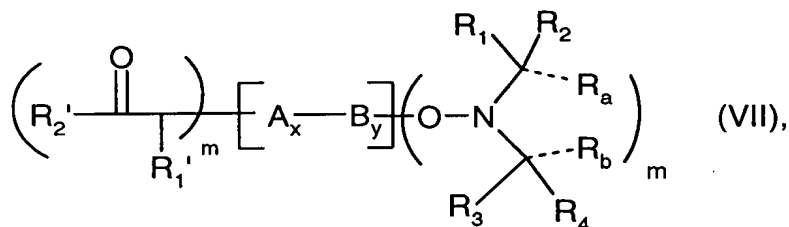
R<sub>2</sub> is the radical of an acylated, branched, trihydric alcohol, the radical of an acylated, linear or branched, tetrahydric alcohol or the radical of a fully or partially acylated, linear, penta- or hexa-hydric alcohol,

A and B are polymer blocks of ethylenically unsaturated monomer units;

x and y denote integers greater than zero and represent the number of monomer units in the blocks A and B; and

m is three or four.

3. A polymer or block copolymer of formula:



wherein

$\text{R}_1'$  is hydrogen,  $\text{C}_1$ - $\text{C}_4$ alkyl, cyano, phenyl or  $\text{C}_1$ - $\text{C}_4$ alkylphenyl;

$\text{R}_2'$  is the radical of an acylated, branched, trihydric alcohol, the radical of a fully or partially acylated, linear or branched, tetrahydric alcohol, the radical of a fully or partially acylated, linear, penta- or hexa-hydric alcohol, the radical of a fully or partially acylated, linear or cyclic  $\text{C}_4$ - $\text{C}_6$ aldose or  $\text{C}_4$ - $\text{C}_6$ ketose or the radical of a fully or partially acylated disaccharide;

A and B are polymer blocks of ethylenically unsaturated monomer units;

x and y denote the number of monomer units in the blocks A and B, one value of x and y being zero and the other value being an integer greater than zero, or both values x and y being integers greater than zero;

X is chlorine, bromine or iodine;

m denotes an integer from three to six;

one of  $\text{R}_1$  and  $\text{R}_2$  is  $\text{C}_1$ - $\text{C}_7$ alkyl and the other is  $\text{C}_1$ - $\text{C}_4$ alkyl or  $\text{C}_1$ - $\text{C}_4$ alkyl substituted by  $\text{C}_1$ - $\text{C}_4$ alkoxycarbonyl or by  $\text{C}_1$ - $\text{C}_4$ alkoxy; or

$\text{R}_1$  and  $\text{R}_2$  together with the adjacent carbon atom are  $\text{C}_3$ - $\text{C}_7$ cycloalkyl;

$\text{R}_3$  and  $\text{R}_4$  have the meanings of  $\text{R}_1$  and  $\text{R}_2$ ;

$\text{R}_a$  is  $\text{C}_1$ - $\text{C}_4$ alkyl, cyano,  $\text{C}_1$ - $\text{C}_4$ alkoxycarbonyl,  $\text{C}_1$ - $\text{C}_4$ alkanoyloxy,  $\text{C}_1$ - $\text{C}_4$ alkanoyloxy- $\text{C}_1$ - $\text{C}_4$ -alkyl, carbamoyl, mono- or di- $\text{C}_1$ - $\text{C}_4$ alkylcarbamoyl, mono- or di-2-hydroxyethylcarbamoyl, amidino, 2-imidazolyl, 1-hydroxy-2-hydroxymethyl-2-propylcarbamoyl or 1,1-dihydroxymethyl-2-hydroxycarbamoyl; and

$\text{R}_b$  has the meanings of  $\text{R}_a$ ; or

Figure 1 illustrates the step-by-step construction of a 3D model of a protein-ligand complex. The diagrams are labeled (a) through (l). (a) shows the protein structure with a binding site. (b) shows the ligand molecule. (c) shows the ligand docked into the binding site. (d) shows the protein structure with the ligand docked. (e) shows the protein structure with the ligand docked. (f) shows the protein structure with the ligand docked. (g) shows the protein structure with the ligand docked. (h) shows the protein structure with the ligand docked. (i) shows the protein structure with the ligand docked. (j) shows the protein structure with the ligand docked. (k) shows the protein structure with the ligand docked. (l) shows the protein structure with the ligand docked.

5. A polymer composition comprising
- a) a polymer or block copolymer (V) according to claim 1, wherein R<sub>1</sub>, R<sub>2</sub>, A, B, x, y and m are as defined; and
  - b) a further polymer or oligomer of formula



A and B are polymer blocks of ethylenically unsaturated monomer units and  $x$  and  $y$  denote the number of monomer units in the blocks A and B, one value of  $x$  and  $y$  being zero and the other value being an integer greater than zero, or both values  $x$  and  $y$  being integers greater than zero.

6. A process for the preparation of a polymer or block copolymer (V), wherein  $R_1$ ,  $R_2$ , A, B, X, x, y and m are as defined in claims 1 and 8, in which process ethylene-group-containing aliphatic monomers that form the basis of the polymer blocks A and B are subjected to a polymerisation reaction by atom transfer radical polymerisation (ATRP) in the presence of the  $\alpha$ -halocarboxylic acid ester (I) as polymerisation initiator, wherein  $R_1$ ,  $R_2$  and X are as defined above, and in the presence of an oxidisable transition metal complex catalyst.

7. Use of a polymer or block copolymer (V) in the preparation of a polymer or block copolymer wherein  $\bullet X$  is replaced by an open-chain or cyclic group  $R'R''N-O\bullet$ .